

**INVESTOR BEHAVIOR AND COMMON STOCK INVESTMENT DECISIONS AMONG  
INDIVIDUAL INVESTORS AT NAIROBI SECURITIES EXCHANGE, KENYA**

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## DECLARATION

I hereby declare that the project presented in this research proposal is my original work and has not been presented elsewhere for any academic qualification.

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## APPROVAL

This research project has been for examination with my approval as university supervisor

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## **DEDICATION**

I dedicate this project to my husband Benjamin, my sons Kipkemoi and Kimulwo, family, siblings & friends who supported me. May the Almighty God bless you all.

## **ACKNOWLEDGEMENT**

First I give my sincere gratitude to the Almighty God for the gift of life and strength that enabled me to undertake this course at Kenyatta University. I also appreciate the valuable contribution of my husband sons, and Family members may God bless you abundantly. Lastly I wish to express my gratitude to my supervisor, Dr. Shiundu for his immense support in the course of my research work.

## TABLE OF CONTENTS

<b>DECLARATION.....</b>	<b>i</b>
<b>DEDICATION.....</b>	<b>ii</b>
<b>ACKNOWLEDGEMENT.....</b>	<b>iii</b>
<b>TABLE OF CONTENTS.....</b>	<b>iv</b>
<b>LIST OF TABLES.....</b>	<b>vii</b>
<b>LIST OF FIGURES .....</b>	<b>viii</b>
<b>OPERATIONAL DEFINITIONS OF TERMS .....</b>	<b>ix</b>
<b>LIST OF ABBREVIATIONS AND ACRONYMS .....</b>	<b>xi</b>
<b>ABSTRACT.....</b>	<b>xii</b>
<b>CHAPTER ONE : INTRODUCTION.....</b>	<b>1</b>
1.1 Background of the Study .....	1
1.1.1 Investors Behaviour .....	2
1.1.2 Investment Decisions .....	3
1.1.3 Nairobi Securities Exchange.....	5
1.2 Statement of the problem .....	7
1.3 Research Objectives.....	8
1.3.1 General Objective .....	8
1.3.2 Specific objectives .....	9
1.4 Research Questions .....	9
1.5 Significance of the Study .....	10
1.6 Scope of the Study .....	10
1.7 Limitations of the study .....	11
1.8 Organization of the study.....	11
<b>CHAPTER TWO: LITERATURE REVIEW .....</b>	<b>12</b>
2.1 Introduction.....	12
2.2 Theoretical Literature Review .....	12
2.2.1 Prospect Theory .....	12
2.2.2 Heuristic Theory .....	13
2.2.3 Modern Portfolio Theory .....	15

2.3 Empirical Review.....	16
2.3.1 Herding Effect and investment decisions .....	16
2.3.2 Risk Aversion and investment decisions.....	18
2.3.3 Anchoring and investment decisions .....	19
2.3.4 Loss Aversion and investment decisions.....	20
2.4 Summary of Literature and Research Gaps .....	22
2.5 Conceptual Framework.....	25
<b>CHAPTER THREE : RESEARCH METHODOLOGY .....</b>	<b>26</b>
3.1 Introduction.....	26
3.2 Research Design.....	26
3.3 Target Population .....	27
3.4 Sampling Design.....	27
3.5 Data Collection Instruments .....	28
3.5.1 Validity .....	28
3.5.2 Reliability.....	29
3.6 Data Collection Procedures.....	30
3.7 Operationalization and Measurement of Study Variables.....	30
3.8 Data Analysis and presentation.....	32
3.9 Ethical Considerations .....	33
<b>CHAPTER FOUR : DATA ANALYSIS AND INTERPRETATION.....</b>	<b>34</b>
4.1 Introduction.....	34
4.2 Response rate .....	34
4.3 Demographic Information.....	34
4.3.1 Gender of the respondents .....	35
4.3.2 Age of respondents.....	35
4.3.3 Marital status.....	36
4.3.4 Level of Education.....	37
4.3.5 Nature of employment .....	37
4.3.6 Monthly income .....	38
4.4 Descriptive Statistics.....	39
4.4.1 Herding Effect and Investment Decision .....	39

4.4.2 Risk Aversion and Investment Decision .....	40
4.4.3 Anchoring Effects and Investment Decision.....	42
4.4.4 Loss aversion and investment decision.....	43
4.5 Regression Analysis .....	44
<b>CHAPTER FIVE : SUMMARY, CONCLUSIONS AND RECOMMENDATIONS.....</b>	<b>48</b>
5.1 Introduction.....	48
5.2 Summary of the study findings .....	48
5.3 Conclusion .....	49
5.4 Recommendation .....	51
5.5 Recommendations for further study.....	51
<b>REFERENCES.....</b>	<b>52</b>
<b>APPENDICES .....</b>	<b>59</b>
APPENDIX I: QUESTIONNAIRE .....	59
APPENDIX II: LIST OF NSE MEMBER BROKERAGE FIRM .....	64

## LIST OF TABLES

Table 2.1 Summary of Literature and research Gaps.....	22
Table 3.1 Operationalization and Measurement of variables.....	31
Table 4.1 Response Rate .....	34
Table 4.2 Age of the Respondents.....	35
Table 4.3 Level of Education .....	37
Table 4.4 Nature of employment .....	38
Table 4.5 Average month income.....	38
Table 4.6 Effects of herding on investors' behaviours and investment decision .....	39
Table 4.7 Impact of risk aversion on investors' behaviours and investment decision .....	41
Table 4.8 Anchoring effects on investors' behaviours and investment decision.....	42
Table 4.9 Effect of loss aversion on investors' behaviours and investment decision .....	43
Table 4.10 Modal Summary.....	44
Table 4.11 ANOVA .....	45
Table 4.12 Regression Coefficients .....	45



## **LIST OF FIGURES**

Figure 2.1 Conceptual Framework .....	25
Figure 4.1 Gender distribution of the respondents.....	35
Figure 4.2 Marital status .....	36

## **OPERATIONAL DEFINITIONS OF TERMS**

- Anchoring** - Refers to the tendency of investors to attach (or “anchor”) their thoughts to a reference point even though it may have no logical relevance to the decision at hand
- Behavioral Finance** - Combines social and psychological theory with financial theory as a means of understanding how price movements in the securities markets occur independent of any corporate actions.
- Herding** - Herd behavior represents the tendency for an individual to mimic the actions of a larger group, whether those actions are rational or irrational. In many cases, herd behavior is a set of decisions and actions that an individual would not necessarily make on his or her own.
- Investment** - Refer to any mechanism used for generating future income. In the financial sense, this includes the purchase of bonds, stocks or real estate property
- Loss Aversion** - Suggests that investors tend to be disproportionately risk averse in relation to their expected outcomes in order to avoid the pain associated with financial loss.
- NSE** - The Nairobi Securities Exchange (NSE) is a leading African Exchange, based in Kenya –one of the fastest-growing economies in Sub-Saharan Africa

- Prospect Theory** - Proposes that investors' decision-making processes are contingent on the perceived values and costs of gains and losses, rather than the likelihood of each outcome.
- Regret Aversion** - Posits that investor indecision and failure to take action typically stems from wanting to avoid responsibility for a poor result

## **LIST OF ABBREVIATIONS AND ACRONYMS**

<b>ANOVA</b>	-	Analysis of variance
<b>CMA</b>	-	Capital Markets Authority
<b>CSAD</b>	-	Cross Sectional Absolute Deviation
<b>EMH</b>	-	Efficient Market Hypothesis
<b>EPS</b>	-	Earnings per Share
<b>GOK</b>	-	Government of Kenya
<b>IPO</b>	-	Initial Public Offer
<b>MPT</b>	-	Modern Portfolio Theory
<b>NASI</b>	-	Nairobi Securities Exchange All Share Index
<b>NSE</b>	-	Nairobi Securities Exchange
<b>NYSE</b>	-	New York Securities Exchange
<b>SPSS</b>	-	Statistical Package for the Social Sciences
<b>USA</b>	-	United States of America

## ABSTRACT

The traditional theory of finance assumes that investors act rationally on the quest of wealth maximization, and that they follow the basic tenets of risk and return in determining which ventures to spend money on. However, various authors who have examined investors' behaviour avow that heuristic driven biases and emotions cloud the investors' judgment, and often negate the rules of rational economic decision making. According to these studies, investors are in fact irrational, and are largely influenced by behavioural factors that introduce biases in their decisions. Behavioural finance is the phenomena where psychology and economics are combined in explaining the irrational decision making processes of economic agents. Psychology explores various facets of human behaviour, and explains how human behaviour deviates from traditional economic assumptions about human behaviour. Proponents of the behavioural finance ideology state that investment decisions are characterized by emotional factors such as endowment, loss aversion, regret aversion and mental accounting, herding behaviour and cognitive factors including overconfidence, gamblers fallacy, hindsight biases and over confidence. This study aimed to determine the investor behavior and investment decision among individual investors at the NSE, which was also the overriding objective of the study. The following theories were employed in the study, Modern Portfolio, Heuristic and Prospect theory. Descriptive research design was used to provide insight on the research problem by describing the behavioural factors that influence individual investment decisions. The target population for this study was the 1,000 individuals' investor who trade at the NSE and had permanent residential address in Nairobi. Primary data was obtained through closed and open-ended questionnaires that were self-administered. Some questionnaires were emailed to the respondents, depending on the agreed media with the respondent. The investors were reached through judgmental sampling technique. Multiple regression analysis method of data analysis was adopted. Descriptive statistical measures such as the mean, mode and standard deviation were calculated using SPSS. It was presented in form of frequencies, percentages, tables, pie charts and bar graphs. Qualitative data was analyzed by means of content analysis. The study findings from model summary revealed that R squared was 0.802 which implies that 80.2% of changes on individual investors at NSE, Kenya are explained by the independent variables of the study. The findings revealed that there is a significant relationship between the investor behavior and investment decision since the P-value is less than 0.05. According to the regression equation established, taking all factors (Herding effects, Risk aversion, Anchoring effect and Loss aversion) constant at zero, the investment decisions will be 4.212. The study provided a P-Value of 0.003 which is lower than the significance level of 0.05, thus investor behaviour significant influence investment decisions among individual investors at the NSE, Kenya. The study concluded that investors' behaviour influence individual investors on investment decision making of individual investors at NSE, Kenya. The study recommended that Nairobi Stock Securities should continuously share information which is geared towards positively influencing investment decision. Through this information investor will be in a position to make wise investment decisions.

## **CHAPTER ONE**

### **INTRODUCTION**

#### **1.1 Background of the Study**

Over the years it has been viewed that the standard finance models of CAPM, APT, portfolio theory and option pricing informed rational finance investors decisions by predicting and explaining market dynamics. Behavioral Finance is the application of psychology to financial behavior; i.e. it is the behavior of practitioners. According to BF, investors are rational, but not in the linear and mathematical sense based on the mean and variance of returns. Instead, investors respond to natural psychological factors such as fear, hope, optimism and pessimism. As a result, asset values may deviate from their fundamental value and as such the theory of market efficiency suffers (Mayo 2009). Hence behavior finance helps to understand why investors buy, hold or sell their stocks without carrying out fundamental analysis and basing their decisions on the results of these analyses. Various definitions on behavioral finance have been advanced by several scholars. Shefrin (2001) stated that behavioral finance is the study of how psychology affects financial decision making and financial markets.

According to Statman (2010) “behavioral finance is a solid structure that incorporates parts of standard finance while replacing others in bridging the gap between theory, evidence and practice” From the above definitions it can be seen that individual investors are affected by psychological factors like cognitive biases in their decision making, rather than being rational with wealth maximization ideologies. Since the thrust of this study will be on the effects of behavioral finance factors on stock investment decisions, it thus adopted the definition by Shefrin (2001) which emphasizes the psychological effects of behavioral finance on financial decision making and financial markets where NSE is a member.

The focal point of behavioural finance is in the manner individuals construe and act upon information while making investment decisions (Shefrin, 2010). Reilly and Brown (2006) define investment as a commitment of funds for a period of time in order to derive a rate of return that will compensate the investor for the time during which the funds are invested, for the expected rate of inflation during the investment horizon and for the uncertainty involved.

### **1.1.1 Investors Behaviour**

Olsen (2001) asserts that behavioural finance seeks to understand and predict systematic financial market implications of psychological decision process. “Behavioural finance, as a part of behavioural economics, is that branch of finance that, with the help of theories from other behavioural sciences, particularly psychology and sociology, tries to discover and explain phenomena inconsistent with the paradigm of expected utility of wealth and narrowly defined rational behavior. The investor behavior revolves around the following variables of study that affects investment decisions among individual investors at NSE, Kenya. The Investor behavior include the following,

Herding effect in financial market is identified as tendency of investors’ behavior to follow the others’ actions. Practitioner usually consider carefully the existence of herding, due to the fact that investors rely on collective information more than private information can result the price deviation of the securities from fundamental value; therefore, many good chances for investment at the present can be impacted. In the security market, herding investors base their investment decisions on the masses' decisions of buying or selling stocks. In contrast, informed and rational investors usually ignore following the flow of masses, and this makes the market efficient. Herding causes a state of inefficient market, which is usually recognized by speculative bubbles.

Loss aversion is an important psychological concept which receives increasing attention in economic analysis. The investor is a risk-seeker when faced with the prospect of losses, but is risk-averse when faced with the prospects of enjoying gain. Loss aversion refers to the difference level of mental penalty people have from a similar size loss or gain (Barberis & Huang, 2001). There is evidence showing that people are more distressed at the prospect of losses than they are pleased by equivalent gains (Barberis & Thaler, 2003).

Risk aversion can be understood as a common behaviour of investor, nevertheless it may result in bad decision affecting investor's wealth (Ritter, 2003). Risk aversion is the reluctance of a person to accept a bargain with an uncertain payoff rather than another bargain with more certain, but possibly lower, expected payoff. For example, a risk-averse investor might choose to put his or her money into a bank account with a low but guaranteed interest rate, rather than into a stock that may have high returns, but also involves a chance of losing value (Barberis & Huang).

Anchoring, It describes the common human tendency to rely too heavily, or "anchor" on one trait or piece of information when making decisions. When presented with new information, the investors tend to be slow to change or the value scale is fixed or anchored by recent observations (Del Missier, 2007). They are expecting the trend of earning is to remain with historical trend, which may lead to possible under reactions to trend changes.

### **1.1.2 Investment Decisions**

Investment decisions are made by investors and investment managers. Investors commonly perform investment analysis by making use of fundamental analysis, technical analysis and judgment. Investment decisions are often supported by decision tools. It is assumed that information structure and the factors in the market systematically influence individuals'



investment decisions as well as market outcomes. Investor market behavior derives from psychological principles of decision making to explain why people buy or sell stocks. These factors will focus upon how investors interpret and act on information to make investment decisions. Behavioural finance is defined by Shefrin, (2000) as “a rapidly growing area that deals with the influence of psychology on the behavior of financial practitioners”. Individual investments behaviour is concerned with choices about purchases of small amounts of securities for his or her own account (Nofsinger and Richard, 2007). No matter how much an investor is well informed, has done research, studied deeply about the stock before investing, he also behaves irrationally with the fear of loss in the future. This different behavior in the individual investors is caused by various factors which compromise the investor rationality. An individual investor is one who purchases generally small amounts of securities for his or her own account. In conventional financial theory, investors are assumed to be rational wealth-maximisers, following basic financial rules and basing their investment strategies purely on the risk-return consideration. However, in practice, the level of risk investors are willing to undertake is not the same, and depends mainly on their personal attitudes to risk (Kimeu, Anyango & Rotich, 2016).

Individual investors differ from institutional investors in terms of their investment profiles, investment horizons and the amount of money expended on an investment venture. An individual investor is one person acting on his own accord as a private entity; while institutional investors are mostly companies. They include entities such as hedge funds, insurance companies, pension funds, commercial banks, mutual funds and endowment funds. Institutional investors have an edge over the private individuals because their investments are managed by professionals, have a large capital base and have access to a wide array of securities to invest in (NSE, 2016).

On the end of the continuum lies the average income individual who lacks current financial commitments, and as such use their savings to invest in income generating ventures, for future consumption. Thangamani (2014) defines investment as the act of putting money into something with the expectation of returns or profits or growth in the worth of the funds employed. Funds are committed on a long term venture, with the expectation of future reward (Nofsinger and Richard, 2007).

Conservative investors invest in low risk investments as they fear indulging in high risk ventures where the probability of losing the principal amount, let alone loss of all the returns, is very high. Such investors will invest in cash forms of investment such as mutual funds, money market securities, and certificates of deposits, treasury bills and savings accounts. Moderate investors on the other hand have a higher risk appetite as compared to conservative investors, and invest in a mix of cash, real estate and bonds (Zuravicky, 2005). On the extreme end of the band are the aggressive investors with a very high risk appetite. They are often involved in the stock market trading, invest in high risk real estate business and believe that higher risk means higher returns. Investment decisions involves the determination of which security or asset to invest in, how much to invest, when to invest and the investment period. Different investment alternatives differ in their risk and return profiles, and depending on the risk appetite of the investor, one can invest in shares, bonds, marketable securities or other securities traded at the NSE (Thaler & Shefrin, 1981).

### **1.1.3 Nairobi Securities Exchange**

The Nairobi Securities Exchange (NSE) was formed in 1954 as a voluntary organization of stock brokers and is now one of the most active capital markets in Africa. As a capital market institution, the Securities Exchange plays an important role in the process of economic

development. It helps mobilize domestic savings thereby bringing about the reallocation of financial resources from dormant to active agents. Long-term investments are made liquid, as the transfer of securities between shareholders is facilitated. The Exchange has also enabled companies to engage local participation in their equity, thereby giving Kenyans a chance to own shares. There are as of July 2012, 60 companies listed at the stock exchange (NSE, 2012). Financial regulators, such as Nairobi Security Exchange is involved in activities of the stock markets in their selected jurisdictions and offer protection to investors against fraudulent activities.

The NSE listed companies are organized into twelve main sectors namely; Agricultural (7), Automobile and accessories (3), Investment services (1), Commercial and services (12), Banking (11), Construction and allied (5), Manufacturing and allied (10), Energy and petroleum (5), Insurance (6), Investment (5), Telecommunications and technology 7(1), Real Estate Investment Trusts (REITS) (1) and Exchange Traded Fund (1). As at September 2017, the NSE had 66 companies whose shares were trading.

It stimulates economic progression and development by mobilizing resources in an economy (Kimani, 2012). Following established regulations, the capital market ensures continuous liquidity in the market since it provides a platform for exchange of financial assets. However, there are clear indications that the macroeconomic environment has been quite volatile, slowing down a sustained stable financial market for long term resource mobilization as per an analysis of the NSE performance for the period between 2008 and 2010 using secondary data (Chelagat, 2011).

## **1.2 Statement of the problem**

There has been an upward and downward trend in NSE 20 share index for example in 2012 the average annual index was Ksh 173.6 billion which was an increment of 11% from the annual average index in 2011. In 2013 the NSE share index declined by 8% to Kshs 159.7 billion. In the year 2014 there was an improvement from the previous year since the volume traded increased by 17% to Kshs 186.7 billion (Nairobi Securities Exchange, 2016). The figures show inconsistency in the volumes traded in NSE over the years. The field of behavioral finance attempts to investigate the psychological and sociological issues that influence investment decision making process of individuals and institutions (Subrahmanyam, 2007). The Kenyan market has recently witnessed tremendous rise in the number of companies applying to be listed on the Nairobi Securities Exchange. Investors on the other hand have responded positively as it is evidenced through repeated oversubscriptions of shares.

Researchers have however proved that due to the market inefficiencies, the standard finance models employed by market practitioners have failed to account for the market anomalies. One can therefore presume that individuals are rational and therefore strictly observe and follow the standard finance models in decision making. It is emerging from the literature Thaler and Shefrin, (1981). Researchers have however proved that due to the market inefficiencies, the standard finance models employed by market practitioners have failed to account for the market anomalies. One can therefore presume that individuals are rational and therefore strictly observe and follow the standard finance models in decision making. It is emerging from the literature that individual investors have embraced heuristics or rule of thumb in their investment decision making (Sobel, 2000). Local studies have not adequately addressed the effects of behavioral aspects of investment decisions at the NSE. Investors need to make rational decisions for

maximizing their returns based on the information available by taking judgments that are free from emotions (Brabazon, 2000). Investor behavior is characterized by overexcitement and overreaction in both rising and falling security markets and various factors influences their decision making processes.

According to Kimani (2011) there were five behavioral factors that were at play. These were: herding, market, prospect, overconfidence and anchoring bias. However, it was not clear whether these behavioral biases affected individual investor decisions concerning IPOs. Additionally, a recent study related to IPOs conducted by Kipngetich *et.al* (2011) modeled investor sentiments in their equation of determinants of IPO pricing in Kenya using secondary data obtained from the NSE. However, their study did not explore the behavioral biases that underpin individual investor behavior during IPOs. This means that most of the studies on investor behavior that have been reported were carried out in mature markets. There is a gap in relevant literature in developing markets particularly Kenya which is an emerging security market. This study addressed the research question of how investor behaviour among individual investors influences investment decisions at the Nairobi Securities Exchange, Kenya.

### **1.3 Research Objectives**

The study entailed the general and specific objectives as discussed below

#### **1.3.1 General Objective**

The general objective of this study was to establish the investor behaviour and common stock investment decisions among individual investors at NSE, Kenya.

### **1.3.2 Specific objectives**

- i. To establish the effect of herding on common stock investment decisions by individual investors at the Nairobi Securities Exchange, Kenya.
- ii. To determine the effect of risk aversion on common stock investment decisions by individual investors on the Nairobi Securities Exchange, Kenya.
- iii. To evaluate the effect of anchoring on common stock investment decisions by individual investors on the Nairobi Securities Exchange, Kenya.
- iv. To evaluate the effect of loss aversion on common stock investment decision by individual investors at Nairobi Securities Exchange, Kenya.

### **1.4 Research Questions**

- i. What is the effect of herding on common stock investment decisions by individual investors at the Nairobi Securities Exchange, Kenya?
- ii. What is the impact of Risk aversion on common stock investment decisions by the individual investors at the Nairobi Securities Exchange, Kenya?
- iii. To what extent does an anchoring affect common stock investment decision by the individual investors at the Nairobi Securities Exchange, Kenya?
- iv. What is the effect of loss aversion on common investment decision by individual investors at the Nairobi Securities Exchange, Kenya?

### **1.5 Significance of the Study**

This research contributes to the body of knowledge in the field of finance by enriching the existing literature on how behavioural factors affect individual investment decisions. Additionally, the study contributes to the field of financial economics by exploring the relationship between investment decisions and cultural, demographic, social and behavioural factors.

Policy makers can be able to formulate better policies that remove the negative effects of the behavioural factors identified in this study, during the policy formulation process. As such, the policies they so come up with will increase investment in the Kenya market, hence resulting in growth in the overall economy.

Stockbrokers and fund managers could determine the heuristic driven biases and rules of thumb that influence individual investor decisions and preference of one form of investment over the other available investment avenues. This can assist them in educating investors on how to deal and gain leverage on these biases in order to earn higher returns.

Finally, the insights gained from this study can be invaluable to individual investors, who have for a long time been ignored by studies, despite their profiles and those of institutional investors being materially different. This research could be a reference point to scholars and researcher who want to further studies in the field of behavioural finance, as it suggests the areas for further studies.

### **1.6 Scope of the Study**

The study focused on the target population of 1000 individual investors who trade at NSE and have permanent residential address in Nairobi. It focused on their stock investment decision that they had made from 2013 to 2018 with regard to the application of behavioral finance.

### **1.7 Limitations of the study**

The researcher faced some limitations during the data collection process. One of them being the subjective nature of the study which made it difficult to verify the validity and reliability of the data collected. The researcher dealt with this limitation by guaranteeing the respondents of the confidentiality of the information provided.

### **1.8 Organization of the study**

This study has been structured in the following order; chapter one provides background information followed by a detailed statement of the problem under study. The general and specific objectives and research hypothesis are explained followed by significance and scope of the study. The next chapter is literature review where prospect, heuristic and modern portfolio theory are discussed. Empirical review on the investor behavior and investment decision is covered in chapter two as well as summary of literature gaps to be filled and a conceptual framework. Chapter three presents the research methodology where research design, target population and data collection instruments is explained while chapter four had presentation of findings and discussions. Chapter five covered the summary of findings, conclusions and recommendations.



## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1 Introduction**

This chapter summarizes the information from other researchers who have carried out their research in the same field of study. The specific areas covered here are review of theories, review of empirical studies, general literature review, theoretical framework and conclusion from literature review.

#### **2.2 Theoretical Literature Review**

The theoretical framework of this study will be guided by three theories that elaborate the relationship between investor behavior and investment decision among individual investors at NSE. These theories are namely the Prospect theory, Heuristic theory and Modern Portfolio theory

##### **2.2.1 Prospect Theory**

This theory was developed by Kahneman and Tversky (1979). The theory focuses on subjective decision-making influencing investors' value system (Filbeck & Horvath, 2005). This theory can be attributed to Kahneman et al., (1979). The theory represents a major paradigm in the field of decision making under uncertainty. Drawing from an assumption of bounded rationality, prospect theory suggests that individuals will exhibit variable risk preferences in differing contexts, and may be either risk averse or risk seeking, depending on how they frame decision problems (Holmes, Bromiley, Dervers, Holcomb, & Mcguire, 2011).

The central and most influential innovation role of prospect theory is reference dependence. Reference dependence means that people do not evaluate the final outcome, but instead they base decisions on gains and losses relative to a reference point (Wakker, 2010). In prospect theory

reference dependence is observed through three major manifestations: sign dependence, that is, the attitudes towards risk/uncertainty captured by the decision weights dependent on the sign of outcomes; diminishing sensitivity for outcomes, that is, people are more sensitive to outcome changes near the reference point than to changes remote from it, and utility reveals this as convexity for losses and concavity for gains; and loss aversion, that is, a negative deviation from reference point has a higher impact than a positive deviation of equal size (Schmidt & Zank, 2012). Prospect theory argues that people exhibit loss aversion, which means that they are more sensitive to losses than to gains when having to make decisions under risk (Kobberling & Wakker, 2005). It argues that loss aversion reflects a value function that is concave for gains, but convex for losses and is deeper for losses than gains (Schmidt, Starmer, & Sugden, 2008).

### **2.2.2 Heuristic Theory**

Heuristics are defined as the rules of thumb, which makes decision making easier, especially in complex and uncertain environments (Ritter, 2003) by reducing the complexity of assessing probabilities and predicting values to simpler judgments. In general, these heuristics are quite useful, particularly when time is limited, but sometimes they lead to biases (Waweru *et al.*, 2008). The decision process by which the investors find things out for themselves, usually by trial and error, lead to the development of rules of thumb. In other words, it refers to rules of thumb which humans use to make decisions in complex, uncertain environments (Ritter, 2003). The reality, the investors decision making process are not strictly rational one. Though the investors have collected the relevant information and objectively evaluated, in which the mental and emotional factors are involved. It is very difficult to separate. Sometimes it may be good, but many times it may result in poorer decision outcomes. Kim and Nofsinger (2008) were ones of the first writers studying the factors belonging to heuristics when introducing three factors

namely representativeness, availability bias, and anchoring. Waweru *et al.* (2008) also list two factors named Gambler's fallacy and Overconfidence into heuristic theory. Representativeness refers to the degree of similarity that an event has with its parent population or the degree to which an event resembles its population.

Representativeness may result in some biases such as people put too much weight on recent experience and ignore the average long-term rate (Ritter, 2003). A typical example for this bias is that investors often infer a company's high long-term growth rate after some quarters of increasing (Waweru *et al.*, 2008). Representativeness also leads to the so-called "sample size neglect" which occurs when people try to infer from too few samples (Barberis & Thaler, 2003). In stock market, when investors seek to buy "hot" stocks instead of poorly performed ones, this means that representativeness is applied. This behaviour is an explanation for investor overreaction. The belief that a small sample can resemble the parent population from which it is drawn is known as the "law of small numbers" which may lead to a Gamblers' fallacy (Barberis & Thaler, 2003).

More specifically, in stock market Gamblers' fallacy arises when people predict inaccurately the reverse points which are considered as the end of good (or poor) market returns Waweru *et al.* (2008). In addition, when people subject to status quo bias, they tend to select suboptimal alternative simply because it was chosen previously (Kempfa & Ruenzi, 2006). Anchoring is a phenomena used in the situation when people use some initial values to make estimation, which are biased toward the initial ones as different starting points yield different estimates Kim and Nofsinger (2008). In financial market, anchoring arises when a value scale is fixed by recent observations. Investors always refer to the initial purchase price when selling or analyzing. Thus, today prices are often determined by those of the past. Anchoring makes investors to define a

range for a share price or company's income based on the historical trends, resulting in under reaction to unexpected changes.

Because the field has largely ignored effort-reduction, it has become susceptible to several confusions and redundancies. The theory is appropriate for the study so as to explain the influence of heuristic factors such as overconfidence bias, anchoring bias and availability bias on investment decision in Nairobi securities exchange. Although, the theory is appropriate for the study its applicability may be inhibited if the investment decision is influenced by other factors apart from the heuristic. Heuristics reduce the mental effort required to make choices and decisions. Other theories argue that heuristics are actually more accurate than they are biased. In other words, investors use heuristics because they are fast and usually correct (Nofsinger, 2008).

### **2.2.3 Modern Portfolio Theory**

It is one of the most important and influential economic theories dealing with finance and investment, MPT was developed by Harry Markowitz in the year 1958 and published under the title "Portfolio Selection". It is the creation of economists who try to understand the market as a whole, rather than business analysts who look for what makes each investment opportunity unique. Investments are described statistically in terms of their expected long-term return rate and their expected short-term volatility. The volatility is equated with risk, measuring how much worse than average an investment's bad years are likely to be. The goal is to identify the acceptable level of risk tolerance and then to find a portfolio with the maximum expected return for that level of risk. The key tenet of Modern portfolio theory therefore is that if one wishes to increase the performance and reduce the risk in an overall investment portfolio, he or she should combine investments that are non-correlated with one another (Thaler & Shefrin. 1981).

Simply put a diversified portfolio of non-correlated investments can provide the highest returns with the least amount of volatility given that the risk of loss in futures trading can be substantial and an investor could potentially lose more than the initial investment. Behavioural finance uses this body of knowledge, rather than taking the arrogant approach that it should be ignored. Limits to arbitrage refer to predicting in what circumstances arbitrage forces will be effective and when they would not be (Lintner, 1998). Behavioural finance uses models in which some agents are not fully rational, either because of preferences or because of mistaken beliefs. MPT is relevant to this study in that it guides the way an individual investor or financial planner allocates money and other capital assets within an investing portfolio. An investing portfolio has long term goals independent of a market's Day today fluctuations; because of these goals, investment portfolio theories aim to aid investors in decision making.

## **2.3 Empirical Review**

Several studies have been conducted on the investor behaviour and investment decision among individual investors at NSE, Kenya.

### **2.3.1 Herding Effect and investment decisions**

Subash (2012) studied the role of behavioural finance in portfolio investment decisions using evidence from India. Subash (2012) found out that, with the exception of Cognitive Dissonance Bias, investors suffered from all biases in a significant manner. Weighted Scoring Analysis revealed that Regret Aversion, Gamblers' Fallacy and Hindsight bias were seen to be affecting the younger investors only. Anchoring, Gamblers' Fallacy and Hindsight were the three biases, which were seen to affect the younger investor lot in the most significant manner, compared to experienced investors, as suggested by results from Chi-squared tests. Tests had shown that all the investors were affected by the various biases while making investment decisions but it could

not be established that one investor group had suffered more losses under the influence of these biases. Results from discriminant analysis suggested that, even though investors were equally prone to committing erroneous decisions owing to being biased, the degree to which each of the biases were affecting them were different in a significant manner to an extent that younger and experienced investors could be separated as two different groups of human beings exhibiting a different behavioural pattern.

Agarwal, Chiu, Liu and Rhee (2011) investigated herding behaviour of domestic and foreign investors in brokerage firms in Indonesia. The study relied on complete order and transaction records on the Jakarta Stock Exchange for the period of May 1995 to May 2003. The results established that foreign investors exhibited a greater propensity to herd in comparison with local investors. They further concluded that a strong brokerage effect on herding was likely driven by common information.

Ndiege (2012) investigated factors influencing investment decision in equity stocks at the NSE among teachers at the Kisumu municipality. The study adopted a descriptive survey design with a sample of 253 teachers from a target population of 2530 teachers used for the research. Data was collected using questionnaires and subsequently analysed using factor analysis and descriptive statistics techniques. The results indicated that decisions to invest in equity stocks were influenced by economic and behavioural factors.

Jains *et al* (2012) examined the psychology and preferences of an investor living in Udaipur through a structured Questionnaire. The findings exhibits that investors are quite cautious while making their investment decisions and prefer the wait and watch policy. They invest in both primary as well as secondary market. Investors are also influenced by the amount of information

existing in market. They are also influenced by various behavioural biases and psychological factors as judgment criteria, i.e. involvement of rationality and irrationality in investment behavior takes them more cautious as it can affect the lifestyle, asset value and relationship with other.

### **2.3.2 Risk Aversion and investment decisions**

Kahneman and Tversky (1979) supposed that under risky investment decisions individual is irrational and has an unpredictable risk propensity. Kahneman and Tversky (1979) stated that an individual tends to be "risk averse in choices involving sure gains and to be risk seeking in choices involving sure losses". Similarly, other studies illustrated that individual behavior related to risk aversion or risk seeking is inconsistent across various circumstances due to different factors (Sitkin & Weingart, 1995).

Other studies generally examine the impact of risk aversion on an individual's risk decision making behavior (Shum and Faig, 2006; Howcroft *et al.*, 2003; Fisher & Statman, 1997). Sitkin and Weingart (1995) found empirical evidence for "the value of retaining the risk propensity construct in theories and empirical research". They found that risk averse decision makers tend to overvalue the probability of loss relative to the probability of gain, and therefore avoid making riskier decisions. However, risk aversion negatively and highly significantly affects stock holdings, and significance is consistent across time (Shum & Faig, 2006). Pennings & Smidts (2000) demonstrated that more risk averse individuals "express stronger intentions to reduce the fluctuations in net income". Hence, they are less expected to acquire riskier investments and are even more eager to pay expert advice when high degree of uncertainty is involved (Lee & Cho, 2005; Howcroft *et al.*, 2003). Risk aversion also influences information search. Under conditions

of uncertainty, risk averse individuals tend to "weight potentially negative outcome more than positive outcome" (Sitkin & Weingant, 1995), therefore overrate the probability of loss.

### **2.3.3 Anchoring and investment decisions**

Lao *et al.* (2011) "investigated existence of herding behaviour in the Chinese and Indian stock markets by using the Cross Sectional Absolute Deviation (CSAD) approach to measure herding behaviour. The findings reveal that herding behaviour exists in both the Chinese and Indian stock markets depending on some market conditions. In the Chinese market, when trading volume is high and market falls, herding behaviour exists. On the other hand, in India the study finds herding behaviour when market goes up. Herding behaviour seems to be irrelevant to the level of trading volume in India, unlike Chinese markets." In both the markets, impact of herding may be stronger due to presence of global financial crisis.

Pompian (2006) in a study on Behavioural Finance and Wealth Management in USA found that investors exhibiting anchoring bias are likely to be influenced by these anchors while answering key questions like „Is this a good time to buy or sell the stock? “or” is the stock fairly priced? The concept of Anchoring can thus be explained by the tendency of investors to “anchor” their thoughts to a logically irrelevant reference point while making an investment decision. Andersen (2010) shows the involvement of Anchoring in decision making of market participants by using an existing trading algorithm. The algorithm was applied to real market data of the Dow Jones Industrial average and CAC40 stock index to look for arbitrage possibilities. The model returned out-of-sample profit even while considering transaction costs on the CAC40 and thus provide evidence that Anchoring had a role to play in the weekly price fixing of the Dow and CAC40. Kibuthu (2005) did a study on capital market on emerging economies with reference to Nairobi Stock Exchange. He established that most of the investors in the developing states have less



information than those in developed countries thus making survival of that stock market at a low pace. Odundo (2004) did a study on the overview and evolution of investment instruments in Sub-Saharan Africa with special reference to Kenya. He established that need to invest and financial constraints were the major factors that led to Evolution of Investment. Wagacha and Mbui (2001) also carried out a survey of Enterprise Attitudes on Kenyan capital market. As observed various studies have not yet described the factors that exert a significant influence on investment decision in stock market.

#### **2.3.4 Loss Aversion and investment decisions**

Berkaert and Liu (2004), Barberis Huang and Thaler (2006), Berkelaar, Kouwenberg and Post (2004), Gomes (2005) and Polkovnichenko (2005) showed that if individuals are loss-averse they either will not participate in equity markets or will allocate considerably less of their wealth to equities. If individuals are loss-averse the potential pain from stock market declines outweighs the pleasure from gains even with a high equity premium. As a result, loss-averse individuals choose to avoid any exposure to equity. Loss aversion implies that individuals frame events as either gains or losses relative to a reference point. In investments, this phenomenon is believed to manifest itself in what is known as “disposition effect”. People are observed to realize gains too quickly in the fear that they may make a loss.

Kansal and Singh (2015) conducted a study on behavioural biases amongst investors in the Indian Stock Exchange. A structured questionnaire was administered among 196 investors who were engineering graduates through convenience sampling technique. Multi criteria technique of analytic hierarchy process was used to define the relative contribution of each behavioural bias in

shaping the investors behaviour. It was established that most investors over rated their loss aversion tendency and they generally had a fear of loss.

In their study, Kadiyala and Rau (2004) revealed that investors usually react to corporate accounting information event announcements. They concluded that accounting information such as financial statements, expected corporate earnings and past performance of stock found to be greatly affecting investor decision to invest in stock market. Investors appeared to not investing in stock market if accounting information was not available to them. Krishnan and Booker (2002) investigate various factors influencing the decisions of individual's investors, and they concluded at a short-term decision, broker recommendations found to influence investment decision to hold or sell a stock.

Adam Smith, (1776) in his study found out that stock the prices should precisely present the values and will only move up and down when there is unexpected news. Thus, economists have deemed financial markets as stable, efficient, and the overall economy tends toward "general equilibrium" (Adam Smith, 1776). However, in reality this does not imply in our contemporary stock market, Shiller (2000) revealed that individual investors do not think and behave rationally.

## 2.4 Summary of Literature and Research Gaps

It is evident that behavioural finance being a new paradigm of finance is being explored both by market practitioners and finance academicians. The summary of literature and research gaps clearly indicates the gaps existing from the previous studies as shown in the table 2.1 below

**Table 2.1 Summary of Literature and research Gaps**

<b>Author</b>	<b>Objectives</b>	<b>Key Findings</b>	<b>Knowledge Gaps</b>	<b>Focus on the current study</b>
Pompian (2006)	Behavioural Finance and Wealth Management	Investors exhibiting anchoring bias are likely to be influenced by these anchors while answering key questions like “Is this a good time to buy or sell the stock?” Or “Is the stock fairly priced?”	The study only focused on the role of behavioural finance and wealth management.	The current study focus on the Investor behaviour and investment decisions among individual investors at NSE in Kenya

Shum & Faig, (2006)	Impact of risk aversion on an individual's risk decision making behavior	Risk averse decision makers tend to overvalue the probability of loss relative to the probability of gain, and therefore avoid making riskier decisions	The study only looked into the impact of risk aversion on an individual risk decision making behavior	Investor behaviour and investment decisions among individual investors at NSE in Kenya
Lao <i>et al</i> (2011)	Investigated existence of herding behaviour in the Chinese and Indian stock markets by using the Cross Sectional Absolute Deviation (CSAD) approach to measure herding behaviour.	Reveal that herding behaviour exists in both the Chinese and Indian stock markets depending on some market conditions	The study only looked into the existence of herding behaviour in the Chinese and Indian stock markets	Investor behaviour and investment decisions among individual investors at NSE in Kenya

Jains(2012)	The psychology and preferences of an investor living in Udaipur	The study reveal that investors are quite cautious while making their investment decisions and prefer the wait and watch policy	The study only focused on the psychology and preferences of an investor living in Udaipur	The current study focus on the Investor behaviour and investment decisions among individual investors at NSE in Kenya
Subash (2012)	Role of behavioural finance in portfolio investment decisions	The study reveals that exception of Cognitive Dissonance Bias, investors suffered from all biases in a significant manner.	The study only focused on the role of behavioural finance in portfolio investment decision	The current study focus on Investor behaviour and investment decisions among individual investors at NSE in Kenya

*Source: Author (2019)*

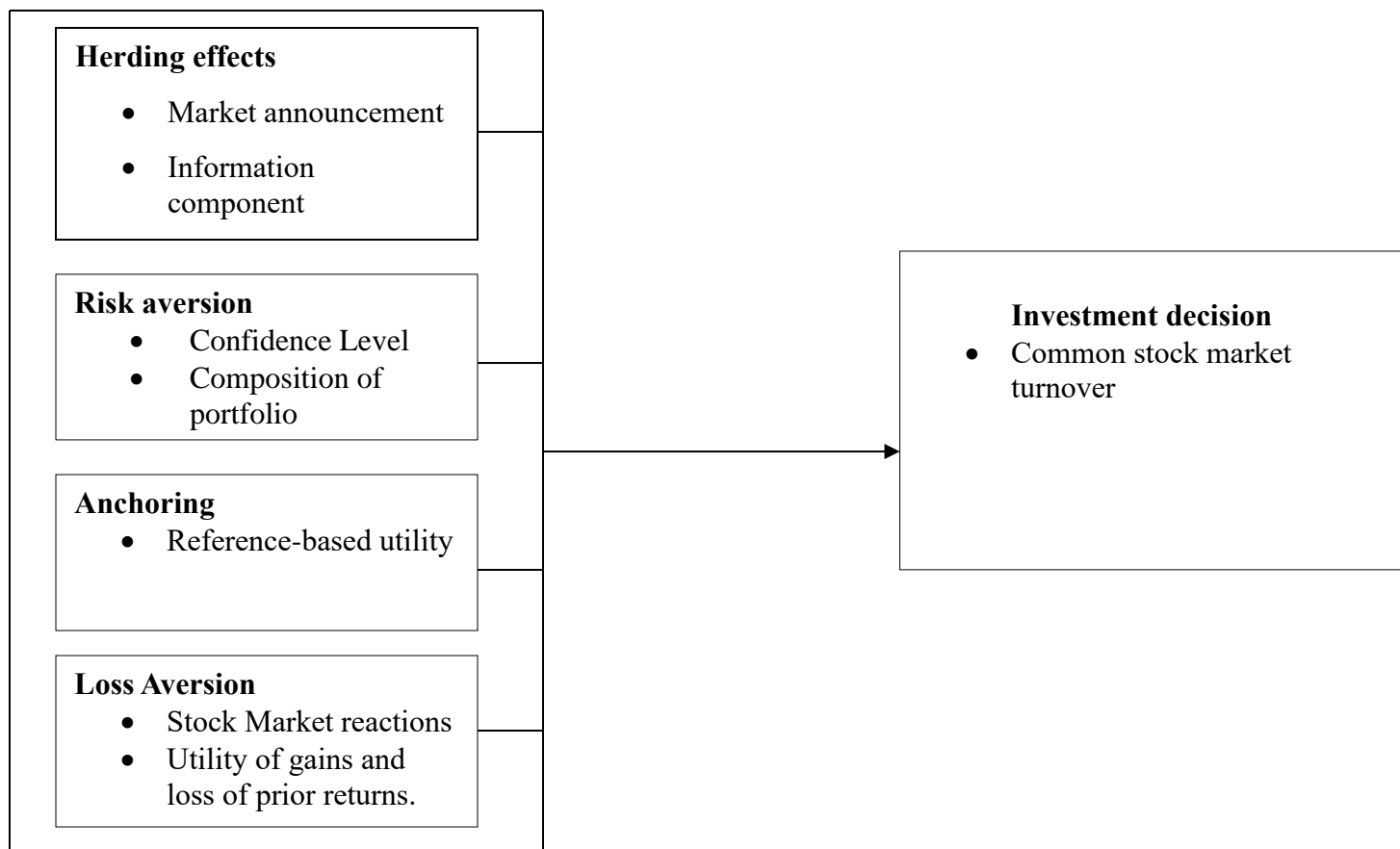
## 2.5 Conceptual Framework

Conceptual framework as shown below discussed independent and dependent variables and their measurements. The dependent variable is investment decision among individual investors whose main indicator is common stock market turnover. The independent variables that were investigated to establish their level of influence on the dependent variable are: Herding effects, Risk aversion, Anchoring and Loss Aversion.

### Independent variables

### Dependent variable

#### Investor Behaviour



**Figure 2.1**Conceptual Framework

*Source: Author (2019)*

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.1 Introduction**

This chapter presents research approach that was used in achieving the study's objectives. It sets out the method that was used in selecting respondents, collecting data and analyzing the same. The chapter is thus structured into: research design, population, sampling, data collection, data analysis, data validity and reliability and ethical considerations.

#### **3.2 Research Design**

Research design is the plan and structure of investigation so conceived as to obtain answers to research questions. The plan is the overall scheme or program of the research. According to Cooper & Schinder (2001), there are many definitions of research design but no one definition impacts the full range of important aspects. According to Kombo and Tromp (2006), research design can be thought of as the structure of research. This research problem was studied through the use of a descriptive research design. According to Cooper and Schindler (2003), a descriptive study is concerned with finding out the what, where and how of a phenomenon. This study therefore is able to generalize the findings to investment banks in Kenya. The main focus of this study is quantitative. However some qualitative approach was used in order to gain a better understanding and possibly enable a better and more insightful interpretation of the results from the quantitative study. This method concerns the intense investigation of problem solving situations in which problems are relevant to the research problem. The underlining concept is to select several targeted cases where an intensive analysis identified the possible alternatives for solving the research questions on the basis of the existing solution applied in the selected case

study. The researcher attempts to describe and define a subject, often by creating a profile of group of problems (Cooper and Schindler, 2003).

### **3.3 Target Population**

Population is defined as the entire set of observable characteristics with which the findings of the study will be generalized (Kothari, 2010). The target population comprised of 1,000 individual investors who trade through the investment banks and stock brokerage firms and have permanent residential address in Nairobi. This choice of respondents conforms with Mugenda and Mugenda (2003) explanation that the target population should have observable characteristics to which the researcher intends to generalize the result of the study. This definition assumes that the population is not homogeneous.

### **3.4 Sampling Design**

A sample is a subset of the population which represents the characteristics of the population or a portion of the population selected for analysis. The sampling design refers to as the method used in selecting the sample size used in research study (Cooper & Schindler, 2003). Out of the investors trading at the Nairobi Securities Exchange, a sample of 100 individual investors were chosen using judgmental sampling technique to represent all the individual investors' in Nairobi this is according to Mugenda Mugenda (2003). The sample was selected from each of the twenty registered stock brokerage and investment banks with five investors selected from each. This is a result of the large number of investors trading, limitations of time to facilitate faster collection and analysis of data, financial constraints to reduce the research costs as it is reduced to a smaller manageable sample which is handled easily and limited human resource in undertaking the study. This sample was considered appropriate as the availability of investors is usually to be



high. The study adopted a judgmental sampling technique where 5 respondents were randomly selected from each of the 20 brokerage firms.

### **3.5 Data Collection Instruments**

The study employed questionnaire to collect primary data. Questionnaires are appropriate for studies since they collect information that is-not directly observable as they inquire about feelings, motivations, attitudes, accomplishments as well as experiences of individuals, Mellenbergh (2008). The questionnaire comprised of both open (and close-ended questions. Franker, (2006) stated that a questionnaire is useful in obtaining objective data because participants are not manipulated in any way by the researcher. According to Franker, (2006) questionnaires have the added advantage of being less costly and using less time as instruments of data collection.

The data instrument addressed the four research objectives while it was sub-divided into two sections. The first section of the questionnaire enquired general information about the respondents, while the next section answered the four objectives that is (herding effect, risk aversion, loss aversion and anchoring). The questionnaires were administered through drop and pick later method. The quantitative section of the instrument to be employed used both a nominal and a Likert type scale format to determine each of the variables. A 5 point Likert scale ranging from 1 to 5 was used as answers to statement like questions. The Likert - type format was selected as the format yields equal - interval data, a fact that allows for the use of more powerful statistical to be used to test hypotheses (Kiess & Bloomquist, 2008).

#### **3.5.1 Validity**

According to Mugenda and Mugenda, (2003), validity is the accuracy and meaningfulness of inferences, based on the research results. One of the main reasons for conducting the pilot study

was to ascertain the validity of the questionnaire. The study used both face and content validity to ascertain the validity of the questionnaires. Face validity is actually validity at face value. As a check on face validity, test/survey items were sent to the pilot group to obtain suggestions for modification, Rousson, Gasser & Seifer (2002). Content validity draws an inference from test scores to a large domain of items similar to those on the test. Content validity is concerned with sample-population representativeness Gillham, (2008) stated that the knowledge and skills covered by the test items should be representative to the larger domain of knowledge and skills. The pilot testing was conducted using the questionnaire where 20 investors were targeted. The pilot group was done through judgmental sampling. The purpose of the pilot testing aims to establish the validity and reliability of the research instruments and hence enhance face validity (Joppe, 2000).

### **3.5.2 Reliability**

The concept of reliability revolves around consistency in the outcome of the research findings. In order to ensure reliability, the research instrument were pretested (piloted) (Zuravicky, 2005). Reliability of the questionnaire was evaluated through administration of the said instrument to the pilot group. A construct composite reliability co-efficient (Cronbach alpha) of 0.6 or above, for all the constructs, was considered adequate for this study. The acceptable reliability coefficient is 0.6 and above, (Rousson, Gasser & Seifer 2002). Cronbach Alpha was used to test the reliability of the research instrument.

**Table 3.1 Reliability Analysis**

	<b>Number of Items</b>	<b>Cronbach's Alpha</b>
Herding effects	6	.742
Risk aversion	5	.711
Anchoring	5	.708
Loss aversion	5	.702

Cronbach Alpha was established for every objective which formed a scale. This illustrates that all the four variables were reliable as their reliability values exceeded the prescribed threshold of 0.6 (Cronbach, 1951). This, therefore, depicts that the research instrument was reliable and therefore required no amendments.

### **3.6 Data Collection Procedures**

Before the commencement of the data collection procedure, the researcher sought an introductory letter from the university and regulatory permit from the National Commission on Science, Technology and Innovation (NACOSTI). Through this, the researcher was able gain access to the management of investment banks and allows for ease of data collections. A questionnaire was self-administered hence the researcher dispatched them to the respondents, and gave them time to complete and then collect them at a later date.

### **3.7 Operationalization and Measurement of Study Variables**

The purpose of the paper was to examine the relationship between investor behaviour and investment decision among individual investors at NSE in Kenya. Investor Behaviour and Investment decision are dependent and independent variables respectively. The independent variable was investor behaviour, while the dependent variable will be investment decision by investors at NSE.

**Table 3.2 Operationalization and Measurement of variables**

Type of Variable	Variable	Operationalization	Measurement	Measurement Scale	Direction
Dependent	Investment decision	Close ended and open ended questionnaires	<ul style="list-style-type: none"> <li>Common stock turnover rate</li> </ul>	Ratio	+/-
Independent	Herding Effect	Close ended questions, Likert Scale	<ul style="list-style-type: none"> <li>Market announcement</li> <li>Information component</li> </ul>	Ordinal	+/-
	Anchoring	Likert scale	<ul style="list-style-type: none"> <li>Reference based utility</li> </ul>	Ordinal	+/-
	Risk Aversion	Likert Scale	<ul style="list-style-type: none"> <li>Confidence Level</li> <li>Composition of portfolio</li> </ul>	Ordinal	+/-
	Loss Aversion	Likert scale	<ul style="list-style-type: none"> <li>Stock Market reactions</li> <li>Utility of gains and loss of prior returns.</li> </ul>	Ordinal	+/-

### 3.8 Data Analysis and presentation

The raw data collected was collated, coded and analyzed. The data was analysed using both quantitative and qualitative data analysis techniques. The quantitative data was descriptively analysed using the Statistical Package for Social Sciences (SPSS) and presented in form of frequencies, percentages, tables, pie charts and bar graphs. Qualitative data was analysed by means of content analysis. The research analyst conducted a multiple regression analysis to determine the strength of the relationship amongst the variables.

#### 3.8.1 The regression model

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon$$

Whereby:

Y = Investment

X<sub>1</sub> = Herding effect

X<sub>2</sub> = Anchoring

X<sub>3</sub> = Risk aversion

X<sub>4</sub> = Loss aversion

$\beta_1, \beta_2, \beta_3, \beta_4$  = Coefficients

$\varepsilon$  = Error term

Linear regression analysis was used to approximate the coefficients to the linear equation and Independent variables that were best predict the value of the dependent variable.

### **3.9 Ethical Considerations**

The researcher was obtained formal authority from the university to conduct the study. The researcher also strive to avoid bias in data analysis, data interpretation, peer review, personnel decisions, thesis writing, and other aspects of research where objectivity is expected or required. Careless errors and negligence was avoided through carefully and critically examination of the data. A good record of research activities, such as data collection, research design, and correspondence with agencies or journals was maintained.

## CHAPTER FOUR

### DATA ANALYSIS AND INTERPRETATION

#### 4.1 Introduction

This chapter presents the findings and interpretations of the results based on the objective of the study. The study aimed at establishing investor behaviour and investment decisions among individual investors at NSE, Kenya.

#### 4.2 Response rate

The sample size of this study was 100 respondents out of which 85 filled and returned their questionnaires, which represents a response rate of 85%. This correlates with Mugenda and Mugenda (2003) recommendation that a response rate of 50% is adequate for analysis and reporting; a rate of 60% is good and a response rate of 70% and over is excellent. This indicates that the response rate from this study was excellent.

**Table 4.1 Response Rate**

<b>Response Rate</b>	<b>Frequency</b>	<b>Percentage</b>
Response	85	85
Non Response	15	15
<b>Total</b>	<b>100</b>	<b>100</b>

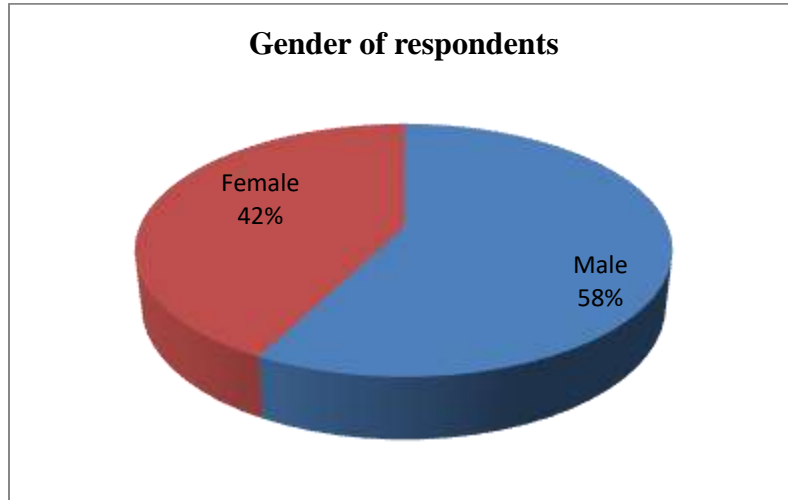
*Source: NSE data (2019)*

#### 4.3 Demographic Information

The demographic information presented is on gender, age, level of education, marital status, nature of employment and average monthly income of the respondents.

#### 4.3.1 Gender of the respondents

The study sought to find out the gender distribution of the respondents trading at the investment banks and stock brokerage firms. The findings were presented in figure 4.1.



*Figure 4.1 Gender distribution of the respondents*

*Source: NSEs data (2019)*

The results in Figure 4.1 revealed that 58% of the respondents were male while 48% were female. This implies that respondents were drawn from all gender group to demystify any gender biasness that might have been associated with the research findings.

#### 4.3.2 Age of respondents

The respondents were requested to indicate their age. The results were tabulated in Table 4.2

**Table 4.2 Age of the Respondents**

Age	Frequency	Percent
30 and below years	22	25.9
31- 40 years	34	40.0
41-50 years	19	22.3
Over 50 years	10	11.8
<b>Total</b>	<b>85</b>	<b>100.0</b>

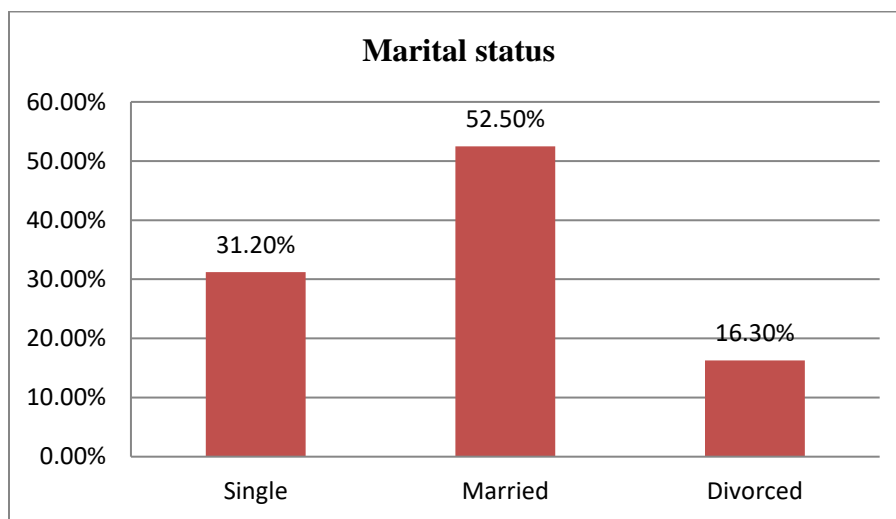
*Source: NSE data (2019)*



The findings in Table 4.2 shows that 40% of the respondents were aged between 31-40 years, 25.9% less than 30 years, 22.3% between 41-50 years and 11.8% over 50 years. The results show that the respondents were distributed well in terms of age and hence they can contribute constructively in the investment decision in stock market within the investment NSE in Kenya.

#### 4.3.3 Marital status

The respondents were requested to indicate their marital status. The results were presented in Figure 4.2



*Figure 4.2 Marital status*

*Source: NSE data (2019)*

Figure 4.2 shows that 52.5% of the respondents were married, 31.2% were single while 16.3% were divorced. The findings implicate that family values plays a big part of investors at the securities market, and it also forms a basis for encouragement and motivation to work harder in their daily engagements.

#### 4.3.4 Level of Education

The respondents were asked to indicate their highest level of education. The findings were as shown in Table 4.3.

**Table 4.3 Level of Education**

<b>Academic level</b>	<b>f</b>	<b>%</b>
Master level	11	12.9
Bachelor degree	35	41.3
Diploma level	24	28.2
Secondary level	15	17.6
<b>Total</b>	<b>85</b>	<b>100</b>

*Source: NSE data (2019)*

The study results in Table 4.3 reveal that, 41.3% of the respondents had acquired a Bachelor's degrees level of education, 28.2% of the respondents indicated that they had acquired diploma, 17.6% had attained Kenya Certificate of Secondary School (KCSE) certificate while 12.9% of respondents had acquired master's degree as their highest level of education. These results imply that all the respondents had at least a KCSE certificate and hence understood the information sought by this study. These findings further imply that all the respondents were academically qualified and also familiar with investor behaviors and investment decisions.

#### 4.3.5 Nature of employment

The study sought to examine the nature of employment the respondents were involved in. The Table 4.4 present the result.

**Table 4.4 Nature of employment**

<b>Employment category</b>	<b>f</b>	<b>%</b>
Self-employment (Farming)	6	7.1
Self-employment (Business)	33	38.8
Formal employment	30	35.3
Both Formal and Self-employment	16	18.8
<b>Total</b>	<b>85</b>	<b>100</b>

*Source: NSE data (2019)*

The results in Table 4.4 revealed that 38.8% of the respondents were self-employment (business), 35.3% formal employment, 18.8% both formal and self-employment and only 7.1% self-employment (farming). This indicates that all category and nature of employees were involved in the study.

#### **4.3.6 Monthly income**

The respondents were requested to indicate their average monthly income. The findings were presented in Table 4.5.

**Table 4.5 Average month income**

<b>Monthly income</b>	<b>f</b>	<b>%</b>
10,000 and below	7	8.2
10,000-20,000	39	45.9
20,001-40,000	27	31.8
Above 40,000	12	14.1
<b>Total</b>	<b>85</b>	<b>100</b>

*Source: NSE data (2019)*

The results in Table 4.4 show that 45.9% of the respondents earn an average monthly income between 10,000-20,000, 31.8% between 20,001 – 40,000, 14.1% above 40,000 while only 8.2% earn less than 10,000. This could be as results of majority of the investors were self-employment (business) optional.

## 4.4 Descriptive Statistics

### 4.4.1 Herding Effect and Investment Decision

The first objective of the study was to establish the effect of herding on common stock investment decisions by investors at the Nairobi Securities Exchange, Kenya. As such the respondents were required to indicate their opinion on whether the herding affects investors' behaviours and investment decision. The respondents were to rate the parameters of effects of herding on a scale of 1 to 5 where 1 (strongly disagree), 2 (disagree), 3 (undecided), 4 (agree), 5 (strongly agree). The means and standard deviations were developed.

**Table 4.6 Effects of herding on investors' behaviours and investment decision**

Parameters	Mean	SDEV
Investors' decisions of choosing stock types have impact on my investment decisions	3.36	0.654
Investors' decisions of the stock volume have impact on my investment decisions	3.33	0.715
Investors' decisions of buying and selling stocks have impact on my investment decisions.	3.25	0.522
I usually react quickly to the changes of other investors' decisions and follow their reactions to the stock market.	2.14	0.54

*Source: NSE data (2019)*

From finding in Table 4.6 the respondents agreed that investors' decisions of choosing stock types have impact on my investment decisions, investors' decisions of the stock volume have impact on my investment decisions and investors' decisions of buying and selling stocks have impact on my investment decisions with mean of 3.36, 3.33 and 3.25 respectively. The findings show that several elements impacts herding behaviour of an investor in reaching their investment decision such as overconfidence, volume of investment, and so on.

The results show that the more confident the investors are. In this case, investors seem to be less interested in herding behaviours. When the investors put a large amount of capital into their investment, they tend to follow the others' actions to reduce the risks, at least in the way they feel. This finding agreed with Waweru (2008) findings which revealed that herding can drive stock trading and create the momentum for stock trading. Subash (2012) revealed that even though investors were equally prone to committing erroneous decisions owing to being biased, the degree to which each of the biases were affecting them were different in a significant manner to an extent that younger and experienced investors could be separated as two different groups of human beings exhibiting a different behavioural pattern.

#### **4.4.2 Risk Aversion and Investment Decision**

The objective two was to impact of risk aversion on common stock investment decisions by investors on the Nairobi Securities Exchange, Kenya. The respondents were to rate the parameters of impact of risk aversion on a scale of 1 to 5 where 1 (strongly disagree), 2 (disagree), 3 (undecided), 4 (agree), 5 (strongly agree). The means and standard deviations were developed. The means and standard deviations were developed.

**Table 4.7 Impact of risk aversion on investors' behaviours and investment decision**

<b>Statement</b>	<b>Mean</b>	<b>SDEV</b>
Investors regard the benefit that the investment will add to their investment values	4.27	0.604
Past positive returns boosts the selling trend and capital investment of the investors	3.92	0.528
Investors have confidence as they are guaranteed of interest rate by NSE	3.98	0.558
Investors are postponing their stock market due to fear of non-assurance return	3.94	0.514

*Source: NSE data (2019)*

Table 4.7 present responses on impact of risk aversion on investors' behaviours and investment decision. The results reveal that majority of the respondents agreed that investors regard the benefit that the investment will add to their investment values (mean = 4.27), investors have confidence as they are guaranteed of interest rate by NSE (mean = 3.98), Investors are postponing their stock market due to fear of non-assurance return (mean = 3.94) and past positive returns boosts the selling trend and capital investment of the investors (mean = 3.92). According to Barberis and Huang (2001) a risk-averse investor might choose to put his or her money into a bank account with a low but guaranteed interest rate, rather than into a stock that may have high returns, but also involves a chance of losing value. The findings collaborate with Shum and Faig (2006) noted that risk aversion negatively and highly significantly affects stock holdings, and significance is consistent across time. More risk adverse individuals express stronger intentions to reduce the fluctuations in net income. Hence, they are less expected to acquire riskier investments and are even more eager to pay expert advice when high degree of uncertainty is involved.

#### 4.4.3 Anchoring Effects and Investment Decision

The objective three was to assess the extent to which anchoring affects common stock investment decisions by investors on the Nairobi Securities Exchange, Kenya. The respondents were to rate the parameters of anchoring effects on a scale of 1 to 5 where 1 (strongly disagree), 2 (disagree), 3 (undecided), 4 (agree), 5 (strongly agree). The means and standard deviations were developed.

**Table 4.8 Anchoring effects on investors' behaviours and investment decision**

Statement	Mean	SDEV
I forecast the changes in stock prices in the future based on the recent stock prices	3.29	0.712
I prefer to buy local stocks than international stocks because the information of local stocks is more available	3.36	0.681

*Source: NSE data (2019)*

From finding in Table 4.8 the respondents agreed that; they prefer to buy local stocks than international stocks because the information of local stocks is more available and they forecast the changes in stock prices in the future based on the recent stock prices with mean of 3.29 and 3.25 respectively. Trading volume is high and market falls. The investors tend to be slow to change or the value scale is fixed or anchored by recent observations (Del Missier, 2007). They are expecting the trend of earning is to remain with historical trend, which may lead to possible under reactions to trend changes. The study findings collaborate with Odundo (2004) revealed that need to invest and financial constrains were the major factors that led to Evolution of Investment.

#### 4.4.4 Loss aversion and investment decision

The objective four was to evaluate the effect of loss aversion on common stock investment decision by investors at NSE, Kenya. The respondents were to rate the parameters of effects of loss aversion on a scale of 1 to 5 where 1 (strongly disagree), 2 (disagree), 3 (undecided), 4 (agree), 5 (strongly agree). The means and standard deviations were developed. The means and standard deviations were developed.

**Table 4.9 Effect of loss aversion on investors' behaviours and investment decision**

<b>Statement</b>	<b>Mean</b>	<b>SDEV</b>
Investors have regretted investing in stock market due to past mistakes	3.54	0.852
Investors are used to selling their shares once they note they are not profit earning at early stage	3.42	0.781
Investors lose hope of investing in stock market if they experienced loss during their initial investment	3.76	0.654
Investors who have incurred loss after gain persists to invest again as they assume the loss occurred due to economic situation of the country	3.12	0.687

*Source: NSE data (2019)*

From Table 4.9, majority of the respondents agreed that investors lose hope of investing in stock market if they experienced loss during their initial (mean = 3.76), investors have regretted investing in stock market due to past mistakes (mean = 3.54), investors are used to selling their shares once they note they are not profit earning at early stage (mean = 3.53). However, only few respondents agreed that investors who have incurred loss after gain persists to invest again as they assume the loss occurred due to economic situation of the country (mean = 3.12). The investors tend to under-weigh probable outcomes compared with certain ones and people



response differently to the similar situations depending on the context of losses or gains in which they are presented. Waweru et al, (2004) describes that states of mind affecting an individual's decision-making processes including regret aversion and loss aversion. The findings collaborate with Kadiyala and Rau (2004) revealed that investors usually react to corporate accounting information event announcements. The accounting information such as financial statements, expected corporate earnings and past performance of stock found to be greatly affecting investor decision to invest in stock market.

#### 4.5 Regression Analysis

The researcher conducted multiple regression analysis to examine relationship between investor behaviour and investment decisions on individual investors at NSE, Kenya. The findings are indicated in subsequent sections;

**Table 4.10 Modal Summary**

<b>Model</b>	<b>R</b>	<b>R Square</b>	<b>Adjusted R Square</b>	<b>Std. Error of the Estimate</b>
<b>1</b>	0.896	0.802	0.822	0.124

*Source: NSE data (2019)*

The Table 4.10 indicates the model summary. From the findings, R was 0.896, adjusted R square was 0.822 and R squared was 0.802. An R square of 0.802 implies that 80.2% of changes on individual investors at NSE, Kenya are explained by the independent variables of the study. However, there are other factors that influence investor behaviour on investment decisions among individual investors that are not included in the model which account for 19.8%. An R of 0.896 on the other hand signifies strong positive correlation between the variables of the study.

**Table 4.11 ANOVA**

<b>Model</b>	<b>SS</b>	<b>df</b>	<b>MS</b>	<b>F</b>	<b>Significance</b>
Regression	361.24	4	474.4	5.16	0.003
Residual	155.65	81	0.952		
<b>Total</b>	<b>516.89</b>	<b>85</b>			

*Source: NSE data (2019)*

From the ANOVA Table 4.11, the study was done at 5% significance level which is 0.05. The study provided a P-Value of 0.003 which is lower than the significance level of 0.05, thus investor behaviour significant influence investment decisions among individual investors at the NSE, Kenya. The overall regression model was significant and therefore a reliable indicator of the study findings. In terms of p values, the study indicated 0.003 which is less than 0.05 and therefore statistically significant.

**Table 4.12 Regression Coefficients**

<b>Multiple Regression Analysis</b>					
<b>Variables</b>	<b>Unstandardized Coefficients</b>		<b>Standardized Coefficients</b>	<b>t</b>	<b>Sig.</b>
	<b>B</b>	<b>Std. Error</b>	<b>Beta</b>		
(Constant)	4.212	0.214		6.924	.003
Herding effects	0.556	0.0174	0.155	1.852	.005
Risk aversion	0.421	0.0214	0.0223	2.533	.007
Anchoring effect	0.391	0.0462	0.0324	2.655	.007
Loss aversion	0.363	0.0242	0.0484	3.105	.008

*Source: NSE data (2019)*

In addition, the researcher conducted a multiple regression analysis so as to determine the relationship behaviour and investment decisions on individual investors and four variables.

As per the SPSS generated table, the equation ( $Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon$ ) becomes:

$$Y = 4.212 + 0.556 X_1 + 0.421 X_2 + 0.391 X_3 + 0.363 X_4$$

Where Y = investment decisions

$X_1$  = Herding effects

$X_2$  = Risk aversion

$X_3$  = Anchoring effect

$X_4$  = Loss aversion

From the table 4.12 show that Herding effects had a positive significant coefficient ( $\beta=0.556$ , P-value = 0.005) which mean that herding effects contribute positive to the investment decisions. Risk aversion had a positive significant coefficient ( $\beta=0.421$ , P-value = 0.007) which mean that herding effects contribute positive to the investment decisions. Anchoring effect had a positive significant coefficient ( $\beta=0.391$ , P-value = 0.007) which mean that herding effects contribute positive to the investment decisions. Lastly, loss aversion had a positive significant coefficient ( $\beta=0.363$ , P-value = 0.008) which mean that herding effects contribute positive to the investment decisions. These findings concur with Caparrelli (2004) who revealed that several elements impacts herding behaviour of an investor in reaching their investment decision. These include; overconfidence, volume of investment, and so on. The more confident the investors are, the more they rely on their private information for the

investment decisions. In this case, investors seem to be less interested in herding behaviours. Also, risk aversion influences investment decision of the individual in stock market. Risk aversion influences investment decision of the individual in stock market to a moderate extent.

## **CHAPTER FIVE**

### **SUMMARY, CONCLUSIONS AND RECOMMENDATIONS**

#### **5.1 Introduction**

This chapter provides a summary of the major findings of the actual study; it then draws conclusions and finally, it makes some recommendations and suggestions on areas of further study.

#### **5.2 Summary of the study findings**

From the findings, investors invest at NSE due to herding effect. This results the NSE to experience emotional biases and congruity. The herding effects cause market unproductive and hence most of the investors seem to be less interest in investing. Herding can drive stock trading and create the momentum for stock trading. The degree to which each of the biases were affecting them were different in a significant manner to an extent that younger and experienced investors could be separated as two different groups of human beings exhibiting a different behavioural pattern. In regression equation, a unit increase in herding will lead to a 0.556 success in investment decision in NSE and a significance value of 0.005.

The study also established that the investors base their investment on gain they expect from the investment. However, there is frequent postponing in investing on stock market among investors till investment bank assure them of the return. Most of the investors have confidence in with investment at NSE. Past positive returns boosts the selling trend and capital investment of the investors within NSE bank. In regression equation, a unit increase in risk aversion will lead to a 0.421 success in investment decision in NSE and had a significance value of 0.007.

The results reveal that anchoring effects cause investors to buy local stocks than international stocks because the information of local stocks is more available and they forecast the changes in stock prices in the future based on the recent stock prices with mean of 3.29 and 3.25 respectively. They are expecting the trend of earning is to remain with historical trend, which may lead to possible under reactions to trend changes. From regression model equation, a unit increase in anchoring effect will lead to a 0.391 increase in investment decisions and had a significance value of 0.007.

Addition, the results reveals that loss aversion influence investment decision on individual investor at NSE. Majority of the respondents agreed that investors lose hope of investing in stock market if they experienced loss during their initial. However, only few respondents agreed that investors who have incurred loss after gain persists to invest again as they assume the loss occurred due to economic situation of the country. Investors usually react to corporate accounting information event announcements. From regression model equation a unit increase in loss aversion transfer will lead to a 0.363 increase in investment decisions with P-value of 0.008. From the ANOVA table, the study provided a P-Value of 0.003 which is lower than the significance level of 0.05, thus investor behaviour and investment decisions significant influence individual investors at NSE, Kenya.

### **5.3 Conclusion**

The research study concluded that herding effect has an influence on the investment decision making of individual investors at NSE, Kenya. It is also clear from the study results that investors choose on which stock types to invest with, investors have right to buy or sell the stocks at their willing time. The findings show that several elements impacts herding behaviour of an investor in reaching their investment decision such as overconfidence, volume of

investment, and so on. When the investors put a large amount of capital into their investment, they tend to follow the others' actions to reduce the risks, at least in the way they feel. Herding can drive stock trading and create the momentum for stock trading.

The research deduces that risk aversion affects investment decision of the individual investors at NSE. The investors in the organizations base their investment on gain they expect from the investment. The organizations experience investors postponing their stock market investment till they are assured of the return, most of the investors in the organization have confidence in the organizations as they are guaranteed of interest rate by investing in the NSE banks, past positive returns boosts the selling trend and capital investment of the investors in our organization and the clients regard the benefit that the investment will add to their investment values when investing to the organization.

Anchoring effects has an impact on the investment decision on individual investors at NSE. The findings revealed that the investors in stock market rely on some information as they make decision on investment. The investors tend to be slow to change or the value scale is fixed or anchored by recent observations. They are expecting the trend of earning is to remain with historical trend, which may lead to possible under reactions to trend changes.

Additionally, the study concludes that loss aversion has impact on investment decision. The investors invest on NSE stock market with specific gain thereafter. The investors are used to selling their shares once they note they are not profit earning at early stage, some of the investors have regretted investing in stock market due to past mistakes, more investors' lose hope of investing in stock market if they experienced loss during their initial investment. Investors usually react to corporate accounting information event announcements. The accounting

information such as financial statements, expected corporate earnings and past performance of stock found to be greatly affecting investor decision to invest in stock market.

#### **5.4 Recommendation**

The following recommendations were made based on study findings:

- i. NSE stock banks should continuously share information which is geared towards positively influencing investment decision. Through this information investors will be in a position to make wise investment decisions.
- ii. Investors should be continuously trained on investment evaluation procedure as such to improve their mental accounting skills. Also, there is need to train investors on risk management and evaluation procedures so as to ensure they will attain maximum benefits from a specific risk.
- iii. Also, there is need to evaluate the influences of prior events in relation to the specific counter under investigation. More so the effect of the learning process should be clearly evaluated to ensure that there is maximum benefit for all parties involved in selling and buying of a security shares.

#### **5.5 Recommendations for further study**

The current study aims at establishing investor behaviour and investment decisions among individual investors at NSE, Kenya. The study recommends that another study be done with an aim to investigate the behavioural factors influencing investment decision in stock market in Kenya where the focus will be on the corporate investors in the stock market in Kenya. The study was conducted to investors in Nairobi. The findings can be verified by conducting the same study in the rest of the country.



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## APPENDICES

### APPENDIX I: QUESTIONNAIRE

#### SECTION A: BACKGROUND OF THE RESPONDENT

1. Gender

Male ☐ Female ☐

2. Age

Less than 30 Years ☐

31-40 Years ☐

41-50 years ☐

More than 50 Years ☐

3. Marital Status

Single ☐ Married ☐ Divorced ☐

4. Level of education you have completed?

Primary Certificate ☐ Secondary Certificate ☐

Other College Education ☐ Diploma ☐ Degree ☐ Certificate ☐ PhD ☐

5. Nature of employment?

Self-employment (Farming) ☐ Self-employment (Business) ☐

Formal employment ☐ Both Formal and Self-employment ☐

6. Please estimate your average monthly income (KSHS)

Less than 10,000 ☐ 10,000-20,000 ☐ 20,001-40,000 ☐



More than 40,000[ ]

## **PART B: HERDING EFFECT AND INVESTMENT DECISION**

7. Please evaluate the degree of your agreement with the effect of herding on your investment decision making on a scale of 1 to 5 where 1 (strongly disagree), 2 (disagree), 3 (undecided), 4 (agree), 5 (strongly agree).

<b>Statements</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
Herding effect Factors (buying and selling, choice and volume of trading stocks, speed of herding)					
Other investors' decisions of choosing stock types have impact on my investment decisions					
Other investors' decisions of the stock volume have impact on my investment decisions.					
Other investors' decisions of buying and selling stocks have impact on my investment decisions.					
I usually react quickly to the changes of other investors' decisions and follow their reactions to the stock market.					

## **PART C: RISK AVERSION AND INVESTMENT DECISION**

8. Please evaluate the degree of your agreement with the impacts of risk aversion on your investment decision making on a scale of 1 to 5 where 1 (strongly disagree), 2 (disagree), 3 (undecided ), 4 (agree), 5 (strongly agree

Statements	1	2	3	4	5
Investors regard the benefit that the investment will add to their investment values					
Past positive returns boosts the selling trend and capital investment of the investors					
Investors have confidence as they are guaranteed of interest rate by NSE					
Investors are postponing their stock market due to fear of non-assurance return					

#### PART D: ANCHORING AND INVESTMENT DECISION

9. Please evaluate the degree of your agreement with the impacts of anchoring on your investment decision making on a scale of 1 to 5 where 1 (strongly disagree), 2 (disagree), 3 (undecided), 4 (agree), 5 (strongly agree)

Statements	1	2	3	4	5
I forecast the changes in stock prices in the future based on the recent stock prices					
I prefer to buy local stocks than international stocks because the information of local stocks is more available					

10. How long have you been participating in the stock market

Less than 1 year [ ]      1 - 3 years [ ]    3 - 5 year      [ ]

5 - 10 years [ ]      Over 10 years [ ]

11. Please name the security company(s) that you are holding an account for stock investment.

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12. Have you attended any course of Stock Exchange?

Yes [ ] No [ ]

13. Which market sector do you usually participate in?

Agricultural sector [ ] Commercial Services [ ] Finance investment [ ]

Alternative Market Segment [ ] Industrial & Allied Sector [ ]

14. What kind of an investor are you?

Speculative (short-term) [ ] Capital Long (long term) [ ] Both [ ]

#### **PART E: LOSS AVERSION AND INVESTMENT DECISION**

- 15 Please evaluate the degree of your agreement with the impact of loss aversion on your investment decision making on a scale of 1 to 5 where 1 (strongly disagree), 2 (disagree), 3 (undecided ), 4 (agree), 5 (strongly agree)

Statements	1	2	3	4	5
Investors have regretted investing in stock market due to past mistakes					
Investors lose hope of investing in stock market if they experienced loss during their initial investment					
Investors are used to selling their shares once they note they are not profit earning at early stage					
Investors who have incurred loss after gain persists to invest again as they assume the loss occurred due to economic situation of the country					

## PART F: INVESTMENT DECISIONS

Indicate your rating of the following investment decisions in your stock. Where 1- very Non-significant, 2- Non-significant, 3- Significant and 4 - Very Significant,

Investment Decisions	1	2	3	4	5
Invest in profitable companies					
Invest in momentum stocks					
Invest in a single stock					
Invest in specific sector					
Invest in a variety of stock					

THANK YOU

## **APPENDIX II: LIST OF NSE MEMBER BROKERAGE FIRM**

1. ABC Capital Ltd IPS Building, 5<sup>th</sup> floor
2. African Alliance (Kenya) Securities Ltd 1stFloor, Trans-national Plaza
3. Afrika Investment Bank Ltd Finance House, 9th Floor
4. Apex Africa Capital Ltd Rehani House.4th Floor
5. CFC Stanbic Financial Services CFC Stanbic House
6. Discount Securities Ltd. (Under Statutory management) Nairobi
7. Drummond Investment Bank Limited Hughes Building, 2nd floor
8. Dyer &Blair Investment Bank Ltd Pension Towers.10th floor
9. Faida Investment Bank LtdWindsor House.1st floor
10. Genghis Capital Ltd Prudential Building, 5th Floor
11. Kestrel Capital (EA) Limited ICEA Building, 5th floor
12. Kingdom Securities Ltd Co-operative Bank House, 5th Floor
13. NgenyeKariuki& Co. Ltd. (Under Statutory Management) Comer House, 8th floor.
14. NIC Securities Limited Ground Floor, NIC House .Masaba Road
15. Nyaga Stockbrokers (Under Statutory management).
16. Reliable Securities Ltd IPS Building. 6th Floor
17. Renaissance Capital (Kenya) Lid Purshottam Place.6th Floor,Westland
18. Standard Investment Bank Ltd ICEA Building, 16th floor
19. Sterling Investment Bank Ltd Barclays Plaza, 5th Floor
20. Suntra Investment Bank Ltd Nation Centre, 7th Floor

Source: Author 2019